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Martin D. Moynihan
PRTSI, Inc.
P. O. Box 16446
Arlington, VA 22215

EXAMINER	
PESIN, BORIS M	

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2174	

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/887,026	ELBER ET AL.	
	Examiner	Art Unit	
	Boris Pesin	2174	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) *36-43* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35, 44-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This communication is responsive to the amendment filed 09/05/2006.

Claims 1-45 are pending in this application. Claims 1, 8, 15, 34, 35, 44, and 45 are independent claims. In the amendment filed 09/05/2006, Claims 1, 8, 15, 20, 34, 35, 44, and 45 were amended. This action is made Final.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7, 15-17, 20-28, 31-33, 35, 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (US 6388667) in view of Gagin et al. (US 5630757).

In regards to claim 1, Sato teaches an encapsulated virtual object for use in an object oriented environment; said virtual object comprising at least a user-sensible aspect and further comprising at least a functional aspect (i.e. Figure 2, Elements 28 and 32 and "The various entities listed in FIG. 3 can be considered as actors in this embodiment. A display actor represents a static body, a moving body, or the like. A sound control actor controls games sounds or the like, so that it generates the sound

that ought to be heard at the position of a vehicle, by way of example, based on position information from a display actor that represents that vehicle." Column 7, Line 23); the said user-sensible aspect being encapsulated as a user-sensible encapsulation, separately from said functional aspect (i.e. Figure 2, Elements 28 and 32 and "The various entities listed in FIG. 3 can be considered as actors in this embodiment. A display actor represents a static body, a moving body, or the like. A sound control actor controls games sounds or the like, so that it generates the sound that ought to be heard at the position of a vehicle, by way of example, based on position information from a display actor that represents that vehicle." Column 7, Line 23). Sato does not specifically teach a virtual object being splitable by locating respective user-sensible and functional encapsulations of the same virtual object at different terminals. Gagin teaches, "The user site hardware is loaded with a first component of the software with a second component of the software running at the server site. The graphics information need not be transmitted from the server site and the user site since the graphics information exists at the users' site. Only status information about the game is transmitted between the sites." (Column 4, Line 22). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sato and Gagin and split up the user-sensible and functional components with the motivation to provide for faster interaction between terminals.

In regards to claim 2, Sato teaches a virtual object as claimed in claim 1, aid object oriented environment being supported on a computer network comprising a first computer linked to a second computer; wherein the said user-sensible aspect is

supported by said first computer and the said functional aspect is supported by said second computer (i.e. Figure 18C, Elements 1304-1 through 1304-n).

In regards to claim 3, Sato teaches a virtual object as claimed in claim 1, where said functional aspect is a behavioral aspect (i.e. Figure 2, Elements 28 and 32).

In regards to claim 4, Sato teaches a virtual object as claimed in claim 1, where said user-sensible aspect comprises at least one of a display aspect and an interaction aspect (i.e. "Actors also include sound control actors, storage region management actors, and actor-to-actor communications actors." Abstract, also Figure 2, Elements 32, and 34).

In regards to claim 5, Sato teaches a virtual object as claimed in claim 1, wherein said functional aspect is encapsulated in a functional encapsulation, and said functional encapsulation is exchangeable for an alternative functional encapsulation, thereby to alter the functionality of the said object (i.e. Figure 2, Elements 24, 32, and 34).

In regards to claim 6, Sato teaches a virtual object as claimed in claim 1, further at least partly defined by a relationship with a second object (Figure 2, Elements 20, 22, 24, and 32).

In regards to claim 7, Sato teaches a virtual object as claimed in claim 6, wherein said relationship is any one of a group comprising a coloring relationship, a positioning relationship, a shape relationship, a timing relationship, a movement relationship, a size relationship, a color relationship, a texture relationship and a reaction relationship (i.e. "The role of the environment actor 32 is to control details such as the color of the background, other than a stage 44, and the brightness of light sources. The roles of the

stage actor 34 and the egg actor 36 are to display the stage 44 and an egg 46, respectively, which are static bodies." Column 9, Line 54).

In regards to claim 15, Sato teaches a virtual reality environment comprising a scene and at least one encapsualted virtual object supported by a scene database (Figure 2, Element 32), said scene database having at least a first interchangeable functional unit associated therewith (Figure 2, Element 20), said first interchangeable functional unit comprising functionality for said at least one first virtual object (Figure 2, Elements 38, 40); said virtual reality environment configured to support a method for facilitating interaction by a plurality of users at a plurality of client terminals with said at least one first object, said first object having a display and interaction characteristics and functional characteristics ("The various entities listed in FIG. 3 can be considered as actors in this embodiment. A display actor represents a static body, a moving body, or the like. A sound control actor controls games sounds or the like, so that it generates the sound that ought to be heard at the position of a vehicle, by way of example, based on position information from a display actor that represents that vehicle." Column 7, Line 23) said method comprising: encapsulating the display and interaction characteristics in a display part of said first object, encapsulating functional characteristics in a functional part of said first object ("The various entities listed in FIG. 3 can be considered as actors in this embodiment. A display actor represents a static body, a moving body, or the like. A sound control actor controls games sounds or the like, so that it generates the sound that ought to be heard at the position of a vehicle, by way of example, based on position information from a display actor that represents that vehicle." Column 7, Line 23). Sato

does not teach downloading said display part of said first object to user client terminals, and retaining said functional part of said first object at a remote location networked with said user client terminals, thereby facilitating splitting said first virtual objects between two terminals. Gagin teaches, "The user site hardware is loaded with a first component of the software with a second component of the software running at the server site. The graphics information need not be transmitted from the server site and the user site since the graphics information exists at the users' site. Only status information about the game is transmitted between the sites." (Column 4, Line 22). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sato and Gagin and split up the user-sensible and functional components with the motivation to provide for faster interaction between terminals.

In regards to claim 16, Sato teaches a virtual reality environment as claimed in claim 15, wherein said functionality for at least said first virtual object comprises behavior (Figure 2, Elements 38 and 40, "Walk Actor").

In regards to claim 17, Sato teaches a virtual reality environment as claimed in claim 15, wherein said functionality for at least said first object comprises rules for determining allowable interactions therewith (i.e. "With this embodiment, other actors can be used to automatically perform various operations with respect to the thus-configured actors (such as launching an actor into the virtual world or killing it off), so that a virtual world can be constructed on the basis of the laws of cause and effect, making it possible to seem like the real world." Column 7, line 11).

In regards to claim 20, Sato teaches an encapsulated virtual reality environment as claimed in claim 15, wherein said first virtual object comprises a user-sensible aspect, and said user-sensible aspect is encapsulated separately from said interchangeable functional unit (i.e. Figure 2, Elements 28, 30, and 32).

In regards to claim 21, Sato teaches a virtual reality environment as claimed in claim 20, wherein said user-sensible aspect comprises at least one of data for display of said virtual object and interaction features (i.e. Figure 2, Element 28 and 30).

In regards to claim 22, Sato teaches a virtual reality environment as claimed in claim 15, wherein said interchangeable functional unit is interchangeable to alter the functionality of said virtual object (Figure 2, Element 22).

In regards to claim 23, Sato teaches a virtual reality environment as claimed in claim 15, wherein said first interchangeable functional unit comprises object-specific functionality for a plurality of virtual objects (Figure 2, Elements 28 and 30).

In regards to claim 24, Sato teaches a virtual reality environment as claimed in claim 20, further comprising at least one second virtual object where said first virtual object comprises a relationship with at least one other virtual object (Figure 2, Elements 28 and 30, "Actor-to-actor communications").

In regards to claim 25, Sato teaches a virtual reality environment as claimed in claim 24, wherein said relationship is direct (Figure 2, Elements 28 and 30, "Actor-to-actor communications").

In regards to claim 26, Sato teaches a virtual reality environment as claimed in claim 24, said first virtual object having a relationship with said at least one second

virtual object such that an interaction applied to said first virtual object causes a consequential interaction with said at least one second virtual object (i.e. "With this embodiment, other actors can be used to automatically perform various operations with respect to the thus-configured actors (such as launching an actor into the virtual world or killing it off), so that a virtual world can be constructed on the basis of the laws of cause and effect, making it possible to seem like the real world." Column 7, line 11).

In regards to claim 27, Sato teaches a virtual reality environment as claimed in claim 24, wherein said relationship with said at least one second object is an indirect relationship, being a relationship involving at least one mediating interaction with at least one intermediate object (i.e. "The role of the environment actor 32 is to control details such as the color of the background, other than a stage 44, and the brightness of light sources." Column 9, Line 54).

In regards to claim 28, Sato teaches a virtual reality environment as claimed in claim 27, said relationship with said at least one second object being defined by an order number, said order number being equal to the number of consequentially interacting objects (i.e. Figure 9A).

In regards to claim 31, Sato teaches a virtual reality environment as claimed in claim 24, wherein said consequential interaction with said at least one second object comprises a change in position of said second object (i.e. "The character actor 28 is responsible for the head of the character 42 on the screen and the character actor 30 is responsible for the head of another character, which is not shown in the figure. A head script used by the character actors 28 and 30 defines actions to be performed by the

characters when they bump into a wall or discover an egg, for example. The role of the walk actors 38 and 40 is to define the walking motion (animation) of each character." Column 9, Line 44).

In regards to claim 32, Sato teaches a virtual reality environment as claimed in claim 24, wherein said consequential interaction with said at least one second object comprises any one of a group comprising a coloring interaction, a positioning interaction, a shape interaction, a timing interaction, a movement interaction, a size interaction, a color interaction, a texture interaction, a status interaction a sale and an internal parameter changing interaction (i.e. "The character actor 28 is responsible for the head of the character 42 on the screen and the character actor 30 is responsible for the head of another character, which is not shown in the figure. A head script used by the character actors 28 and 30 defines actions to be performed by the characters when they bump into a wall or discover an egg, for example. The role of the walk actors 38 and 40 is to define the walking motion (animation) of each character." Column 9, Line 44).

In regards to claim 33, Sato teaches a virtual reality environment as claimed in claim 24, wherein said relationship is dynamically defined by a logical query (i.e. "The combination of the information for identifying a method for an actor, the information for identifying a model of a display object represented by an actor, and the disposition information for a display object represented by an actor may be changeable in real time. With such a configuration, operation could be in accordance with a first method and first disposition information during a first time period and in accordance with a second

method and second disposition information during a second time period, by way of example. This makes it possible to implement a virtual world that is full of variety, even with a small number of models and methods, by combining them dynamically." Column 3, Line 33).

In regards to claim 35, Sato teaches a method for facilitating interaction by a plurality of users at a plurality of client terminals with at least a first object, said first object having display and interaction characteristics and functional characteristics (i.e. "The character actor 28 is responsible for the head of the character 42 on the screen and the character actor 30 is responsible for the head of another character, which is not shown in the figure. A head script used by the character actors 28 and 30 defines actions to be performed by the characters when they bump into a wall or discover an egg, for example. The role of the walk actors 38 and 40 is to define the walking motion (animation) of each character." Column 9, Line 44), in a networked virtual reality environment (i.e. Figure 18C); said method comprising: encapsulating the display characteristics in a display and interaction part of said first object (i.e. Figure 2, Elements 28 and 30), encapsulating functional characteristics in a functional part of said first object (i.e. Figure 2, Elements 28 and 30), and downloading said display and interaction part of said first object to user client terminals (i.e. Figure 18C, Elements 1302). Sato does not specifically teach retaining said functional part of said first object at a remote location networked with said user client terminals, thereby facilitating splitting said virtual object between two terminals. Gagin teaches, "The user site

hardware is loaded with a first component of the software with a second component of the software running at the server site. The graphics information need not be transmitted from the server site and the user site since the graphics information exists at the users' site. Only status information about the game is transmitted between the sites." (Column 4, Line 22). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sato and Gagin and split up the user-sensible and functional components with the motivation to provide for faster interaction between terminals.

In regards to claim 44, Sato teaches a method for controlling the functionality of a set of virtual objects within a virtual reality environment, comprising: incorporating allowable functionality for said set of virtual objects within a dedicated control element associated with said virtual reality environment (i.e. "The character actor 28 is responsible for the head of the character 42 on the screen and the character actor 30 is responsible for the head of another character, which is not shown in the figure. A head script used by the character actors 28 and 30 defines actions to be performed by the characters when they bump into a wall or discover an egg, for example. The role of the walk actors 38 and 40 is to define the walking motion (animation) of each character." Column 9, Line 44), incorporating identification functionality within said dedicated control element to enable said dedicated control element to distinguish between virtual objects within said set and virtual objects not within said set, and thereby allowing said dedicated control element to control virtual objects within said set ("The character actor 28 is responsible for the head of the character 42 on the screen and the character actor

30 is responsible for the head of another character, which is not shown in the figure. A head script used by the character actors 28 and 30 defines actions to be performed by the characters when they bump into a wall or discover an egg, for example. The role of the walk actors 38 and 40 is to define the walking motion (animation) of each character." Column 9, Line 44, if the object is within the path of the actor then it is in the set, therefore the actor interacts with it), said control element comprising a method for facilitating interaction by a plurality of users at a plurality of client terminals with at least a first encapsulated virtual object, said virtual object comprising at least a user-sensible aspect and further comprising at least a functional aspect; said user-sensible aspect being encapsulated as a user-sensible encapsulation, separately from said functional aspect (i.e. "The various entities listed in FIG. 3 can be considered as actors in this embodiment. A display actor represents a static body, a moving body, or the like. A sound control actor controls games sounds or the like, so that it generates the sound that ought to be heard at the position of a vehicle, by way of example, based on position information from a display actor that represents that vehicle." Column 7, Line 23). Sato does not teach a method for facilitating splitting a first virtual object between two terminals. Gagin teaches, "The user site hardware is loaded with a first component of the software with a second component of the software running at the server site. The graphics information need not be transmitted from the server site and the user site since the graphics information exists at the users' site. Only status information about the game is transmitted between the sites." (Column 4, Line 22). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sato and

Gagin and split up the user-sensible and functional components with the motivation to provide for faster interaction between terminals.

In regards to claim 45, Sato teaches a method for facilitating interaction by a plurality of users at a plurality of client terminals with at least a first encapsulated virtual object, said first object having display characteristics and functional characteristics, in a networked virtual reality environment; said method comprising: encapsulating the display characteristics in a display and interaction part of said first object (i.e. Figure 2, Elements 28 and 30), encapsulating functional characteristics in a functional part of said first object (i.e. Figure 2, Elements 28 and 30), downloading said display and interaction part of said first object to user client terminals (i.e. Figure 18C, Elements 1302), retaining said functional part of said first object at a remote location networked with said user client terminals (i.e. Figure 18C, Element 1300), and said interactions comprising trading using said objects (i.e. Figure 16). Sato does not teach a method for facilitating splitting the first virtual object between two terminals. Gagin teaches, "The user site hardware is loaded with a first component of the software with a second component of the software running at the server site. The graphics information need not be transmitted from the server site and the user site since the graphics information exists at the users' site. Only status information about the game is transmitted between the sites." (Column 4, Line 22). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sato and Gagin and split up the user-sensible and functional components with the motivation to provide for faster interaction between terminals.

Claims 8-12, 13, 14 18, 19, 29, 30, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (US 6388667) in view of Matsuda (US 6734885).

In regards to claim 8, Sato teaches a first virtual object within a virtual computing environment, said first virtual object having a relationship with a second virtual object, said relationship being such that an interaction with said first virtual object is operable to bring about a consequential interaction with at least said second object (i.e. "Actors also include sound control actors, storage region management actors, and actor-to-actor communications actors." Abstract). Sato does not teach a virtual computing environment comprising a method for restricting the number of consequential interactions of a virtual object with further virtual objects when the number of interacting objects involved in said consequential interactions reaches a predefined maximum. Matsuda teaches "In an observation study, for example, a number of clients each want to see and walk about the 3-dimensional virtual space by operating its avatar. For each operation, the amount of system processing increases, causing the amount of communication on a transmission line to rise as well since every avatar shares information with other avatars. For this reason, it is necessary to impose an upper limit on the number of clients allowed to participate in the 3-dimensional virtual space each as a guest who wants to have experience of the 3-dimensional virtual space before becoming a regular client." Column 2, Line 31). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sato with the teachings of

Matsuda and put a limit on the number of interactions between objects with the motivation to maintain the speed and usability of the virtual world.

In regards to claim 9, Sato and Matsuda teach all the limitations of claim 8. Sato further teaches a first virtual object as claimed in claim 8 wherein said relationship is direct (Figure 2, Elements 38 and 40, "Actor-to-actor communications").

In regards to claim 10, Sato and Matsuda teach all the limitations of claim 8. Sato further teaches a first virtual object as claimed in claim 8, wherein said relationship with said second object is an indirect relationship, being a relationship involving at least one mediating interaction with at least one intermediate object (i.e. "The role of the environment actor 32 is to control details such as the color of the background, other than a stage 44, and the brightness of light sources." Column 9, Line 54).

In regards to claim 11, Sato and Matsuda teach all the limitations of claim 10. Sato further teaches a relationship with said second virtual object being defined by an order number, said order number being equal to the number of consequentially interacting objects (i.e. Figure 9A).

In regards to claim 12, Sato teaches all the limitations of claim 11. Sato does not teach a virtual object having a predetermined interaction limit, and an interaction stopper operable to prevent further consequential interactions occurring once a number of interactions corresponding to said interaction limit has been reached. Matsuda teaches "In an observation study, for example, a number of clients each want to see and walk about the 3-dimensional virtual space by operating its avatar. For each operation, the amount of system processing increases, causing the amount of

communication on a transmission line to rise as well since every avatar shares information with other avatars. For this reason, it is necessary to impose an upper limit on the number of clients allowed to participate in the 3-dimensional virtual space each as a guest who wants to have experience of the 3-dimensional virtual space before becoming a regular client." Column 2, Line 31). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sato with the teachings of Matsuda and put a limit on the number of interactions between objects with the motivation to maintain the speed and usability of the virtual world.

In regards to claim 13, Sato and Matsuda teach all the limitations of claim 13. Sato does not teach a virtual object wherein said predetermined interaction limit is specific to at least one of an interaction order and an interaction type, and said interaction stopper is operable to stop interactions within said specificity. Matsuda teaches "In an observation study, for example, a number of clients each want to see and walk about the 3-dimensional virtual space by operating its avatar. For each operation, the amount of system processing increases, causing the amount of communication on a transmission line to rise as well since every avatar shares information with other avatars. For this reason, it is necessary to impose an upper limit on the number of clients allowed to participate in the 3-dimensional virtual space each as a guest who wants to have experience of the 3-dimensional virtual space before becoming a regular client." Column 2, Line 31). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sato with the teachings of

Matsuda and put a limit on the number of interactions between objects based on the order with the motivation to maintain the speed and usability of the virtual world.

In regards to claim 14, Sato and Matsuda teach all the limitations of claim 8. Sato further teaches a first virtual object as claimed in claim 8 wherein said consequential interaction with said at least second object comprises a change in at least one of location, movement, shape, size, status, internal parameters, color and texture of said second object (i.e. "With this embodiment, other actors can be used to automatically perform various operations with respect to the thus-configured actors (such as launching an actor into the virtual world or killing it off), so that a virtual world can be constructed on the basis of the laws of cause and effect, making it possible to seem like the real world." Column 7, line 11).

In regards to claim 18, Sato teaches all the limitations of claim 15. Sato does not specifically teach a virtual reality environment wherein said functionality comprises rules for determining non-allowable interactions therewith. Matsuda teaches "In an observation study, for example, a number of clients each want to see and walk about the 3-dimensional virtual space by operating its avatar. For each operation, the amount of system processing increases, causing the amount of communication on a transmission line to rise as well since every avatar shares information with other avatars. For this reason, it is necessary to impose an upper limit on the number of clients allowed to participate in the 3-dimensional virtual space each as a guest who wants to have experience of the 3-dimensional virtual space before becoming a regular client." Column 2, Line 31).

In regards to claim 19, Sato and Matsuda teach all the limitations of claim 18. Sato does not teach a virtual reality environment, wherein said functionality comprises rules for restricting allowable interactions therewith. Matsuda teaches "In an observation study, for example, a number of clients each want to see and walk about the 3-dimensional virtual space by operating its avatar. For each operation, the amount of system processing increases, causing the amount of communication on a transmission line to rise as well since every avatar shares information with other avatars. For this reason, it is necessary to impose an upper limit on the number of clients allowed to participate in the 3-dimensional virtual space each as a guest who wants to have experience of the 3-dimensional virtual space before becoming a regular client." Column 2, Line 31).

In regards to claim 29, Sato teaches all the limitations of claim 28. Sato does not teach a virtual reality environment as claimed in claim 28, having a predetermined interaction total, and an interaction limiter operable to stop further first order consequential interactions occurring when a number of first order interactions equaling said predetermined interaction total has been reached. Matsuda teaches "In an observation study, for example, a number of clients each want to see and walk about the 3-dimensional virtual space by operating its avatar. For each operation, the amount of system processing increases, causing the amount of communication on a transmission line to rise as well since every avatar shares information with other avatars. For this reason, it is necessary to impose an upper limit on the number of clients allowed to participate in the 3-dimensional virtual space each as a guest who

wants to have experience of the 3-dimensional virtual space before becoming a regular client." Column 2, Line 31). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sato with the teachings of Matsuda and put a limit on the number of interactions between objects with the motivation to maintain the speed and usability of the virtual world.

In regards to claim 30, Sato teaches all the limitations of claim 24. Sato does not teach a virtual reality environment as claimed in claim 24, having a predetermined interaction total, and an interaction limiter operable to stop further consequential interactions occurring when a number of interactions equaling said predetermined interaction total has been reached. Matsuda teaches "In an observation study, for example, a number of clients each want to see and walk about the 3-dimensional virtual space by operating its avatar. For each operation, the amount of system processing increases, causing the amount of communication on a transmission line to rise as well since every avatar shares information with other avatars. For this reason, it is necessary to impose an upper limit on the number of clients allowed to participate in the 3-dimensional virtual space each as a guest who wants to have experience of the 3-dimensional virtual space before becoming a regular client." Column 2, Line 31).

In regards to claim 34, Sato teaches a dedicated control element for controlling the functionality of virtual objects belonging to a set of virtual objects within a virtual reality environment (i.e. "The character actor 28 is responsible for the head of the character 42 on the screen and the character actor 30 is responsible for the head of another character, which is not shown in the figure. A head script used by the character

actors 28 and 30 defines actions to be performed by the characters when they bump into a wall or discover an egg, for example. The role of the walk actors 38 and 40 is to define the walking motion (animation) of each character." Column 9, Line 44), said dedicated control element being associated with said virtual reality environment, and comprising: identification functionality for determining whether a virtual object within said virtual reality environment is a member of said set (i.e. "The character actor 28 is responsible for the head of the character 42 on the screen and the character actor 30 is responsible for the head of another character, which is not shown in the figure. A head script used by the character actors 28 and 30 defines actions to be performed by the characters when they bump into a wall or discover an egg, for example. The role of the walk actors 38 and 40 is to define the walking motion (animation) of each character." Column 9, Line 44), and control functionality for processing events received from said identified virtual object, said control functionality being operable to bring about a consequential interaction of said virtual object with further virtual objects (i.e. "The character actor 28 is responsible for the head of the character 42 on the screen and the character actor 30 is responsible for the head of another character, which is not shown in the figure. A head script used by the character actors 28 and 30 defines actions to be performed by the characters when they bump into a wall or discover an egg, for example. The role of the walk actors 38 and 40 is to define the walking motion (animation) of each character." Column 9, Line 44). Sato does not teach a dedicated control element comprising a method for restricting the number of consequential interactions of a virtual object with further virtual objects when a maximum number of

interacting objects involved in said consequential interactions. Matsuda teaches "In an observation study, for example, a number of clients each want to see and walk about the 3-dimensional virtual space by operating its avatar. For each operation, the amount of system processing increases, causing the amount of communication on a transmission line to rise as well since every avatar shares information with other avatars. For this reason, it is necessary to impose an upper limit on the number of clients allowed to participate in the 3-dimensional virtual space each as a guest who wants to have experience of the 3-dimensional virtual space before becoming a regular client." Column 2, Line 31). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sato with the teachings of Matsuda and put a limit on the number of interactions between objects with the motivation to maintain the speed and usability of the virtual world.

Response to Arguments

Applicant's arguments filed 09/05/2006 with respect to claims 1-45 have been fully considered but they are not persuasive.

In regards to the Applicant's argument that Sato does not teach a splittable object such that its user-sensible aspect and its functional aspect can be separated onto different terminals, the Examiner agrees. That is why the Examiner relied on the teachings in Gagin for separating parts of the virtual objects onto different terminals. Gagin teaches, "The graphics information need not be transmitted from the server site and the user site since the graphics information exists at the users' site. Only status

information about the game is transmitted between the sites" (Column 4, Line 22). By doing so Gagin splits the graphics aspect of the object and the functional aspect of the objects to reduce the amount of bandwidth that is consumed by the user. The combination of Sato-Gagin teaches the Applicant's invention.

In regards to the Applicant's argument that Matsuda does not teach limiting the number of interacting objects, the Examiner respectfully disagrees. By limiting the number of users that interact, Matsuda limits the number of interacting objects. Less users will equate with less interacting objects. The Applicant even concedes in his remarks that, "the idea of limiting the number of users ... may indirectly lower the number of interacting objects" (Page 15). The claim language does not set out whether the limiting is direct or indirect, but only that it limits. Therefore, the Examiner believes the combination of Sato-Matsuda teaches the Applicant's invention.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boris Pesin whose telephone number is (571) 272-4070. The examiner can normally be reached on Monday-Friday except every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kristine Kincaid can be reached on (571) 272-4063. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BP

Kristine Kincaid
KRISTINE KINCAID
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100